

Editing OpenStreetMap with JOSM

Definition

JOSM or Java OpenStreetMap Editor, is a powerful desktop application which allows users to edit OpenStreetMap data while offline.

Introduction

In this manual you will learn how to edit maps using JOSM on OpenStreetMap.

I. **Download** the current (existing) map data from OSM

- Tour of JOSM
- Download OSM Data
- JOSM Layers

II. **Edit** it using GPS tracks

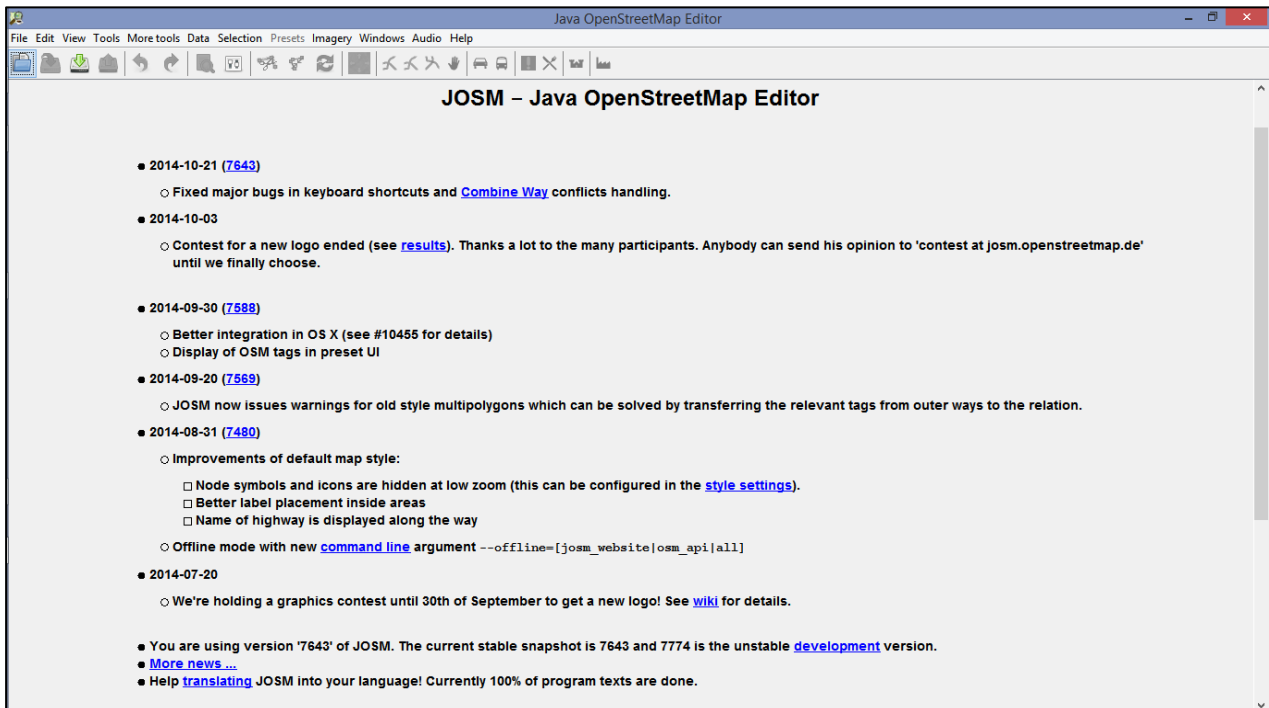
- Edit
- Tags

III. **Save** changes to OpenStreetMap

- Upload Changes
- See Changes on OSM

1. Opening and Starting JOSM

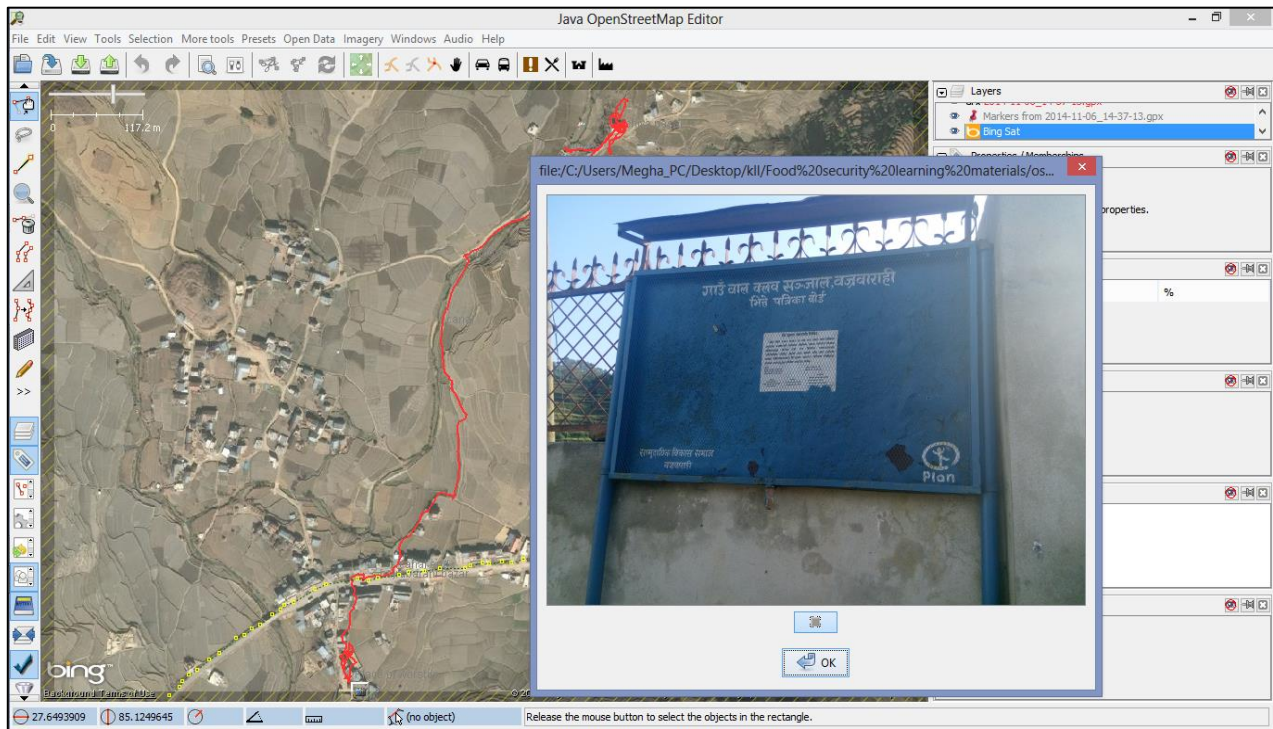
A. To start JOSM find the program josm-latest.jar/JOSM on your computer. Double click on it. Once the program starts you will see the following interface.



B. Copy your GPX file created using OSM Tracker to your computer (if unsure on how to do this refer to manual ([OSM Tracker Manual](#))). After the GPX file is copied to your computer, you can drag and drop the file on the JOSM interface (shown in the figure above). Alternatively, on the same interface, go to upper left corner and click on “File”. A dropdown menu will appear, click “Open”. Browse to the desired GPX file location and select the GPX file. Your GPX file should open.

C. On the right of the map window are a series of panels, each of which does something different. Typically when you first run JOSM after a fresh installation, several panels are shown by default, such as Layers, Properties, and Selection. When you select a point, line, or shape in the map window, it will be shown in the Selection panel. Information about the selected object will be shown in the Properties panel.

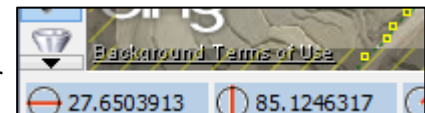
D. To load the satellite imagery in JOSM, click ‘**Imagery**’ in the menu bar. You will see different options for different image sources. For now select ‘**Bing Image**’.

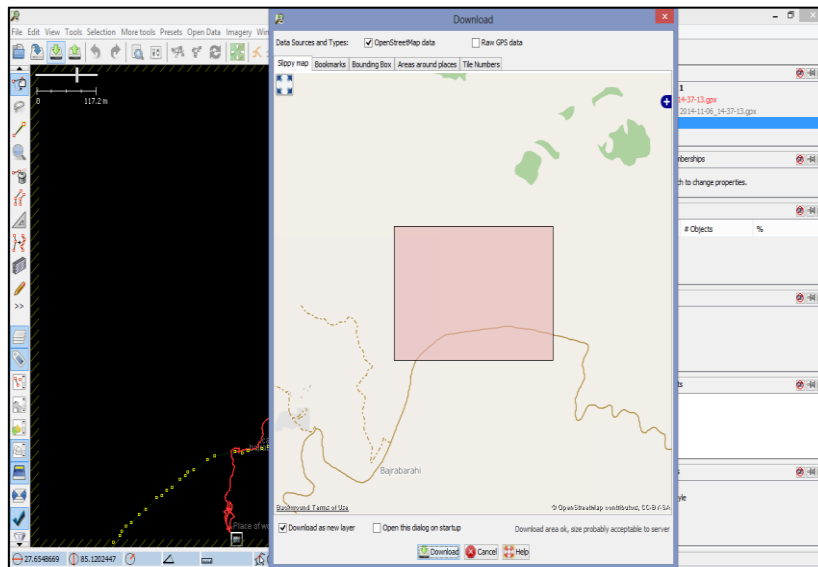


- E. On the left side of JOSM, there are several toolbars, which consist of many buttons. At the top of this bar are different buttons which change what you can do with your mouse. The **most important** are the **Select tool** and the **Draw tool**. The other tools make it easier to zoom in, delete an object, draw a shape, or create a line a parallel line.

2. Download (existing) OSM Data

- A. Before you can edit the map, you must download the existing OSM data in the area.
- B. When you open your GPX track, the map window will show what you have opened, and will automatically move to the correct coordinates. After you open your files, look in the bottom left corner of JOSM. You can see the latitude and longitude (coordinates) of your mouse cursor.
- C. Because our map window is already showing the area that you want to edit, it is easy to download the OpenStreetMap data for this area. Click on “File” in the top left corner of JOSM and click “Download from OSM”. This will open up the download window. You can access this window more simply by clicking on the download button, shown at the right side.
- D. When the download window opens, you should see a map with a pink box drawn on it. If you don’t see the map, click on the tab marked “Slippy map”.

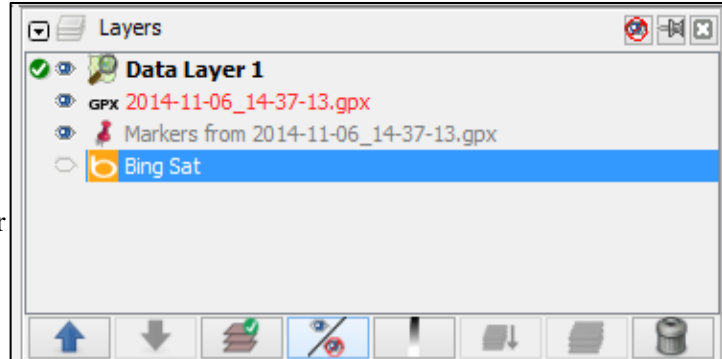






- E. The pink box represents the area of the map that you would like to download for editing. Unless you have moved the map window since you opened your GPS file, the box should be drawn around the correct area. However if you would like to download a larger area, you can draw a new box. To draw a new box, click on the map, hold your left mouse button down, and drag your mouse to create a box. Release the mouse button to finish drawing the box.
- F. When you are satisfied with the size and location of the box, click “Download” at the bottom of the window. JOSM will get the existing data for this area from OpenStreetMap and open it in your map window for editing

3. JOSM Layers

- A. Open your GPX file and downloaded data from OpenStreetMap, if you haven’t already (Follow sections 1 and 2 above). You may notice that when you open a file or download from OpenStreetMap, another item is added to the Layers panel on the right side of JOSM. Your Layers panel may look something like the image on the right side.



- B. Each item in this list represents a different source of data that you have to open in your map window. In the example above, “Data Layer 1” is the OpenStreetMap data that you want to edit. “Markers” are the waypoints from the GPS, and “2014-11-06_14-37-13.gpx” is the track from OSMTracker. You can add the Bing imagery layer, which shows satellite imagery, by clicking “Imagery” on the top menu of JOSM and selecting “Bing Sat.”
- C. To hide one of these layers, select one of them with your mouse and click the Show/Hide button that looks like this: 
- D. You should see the layer that you selected disappear in the map window. Click Show/Hide again, and it will reappear.
- E. You can delete a layer by selecting it and using the delete button: 

- F. Lastly, it is important to know that you can only edit the layer that is considered active by JOSM. If you are unable to edit the map in your map window, it is probably because you don't have the correct layer set as active. Most layers, such as GPS points (OSMTracker) and satellite imagery cannot be edited. The only layers that can be edited are data from OpenStreetMap, which are usually named similar to "Data Layer 1".



4. Editing Map using JOSM

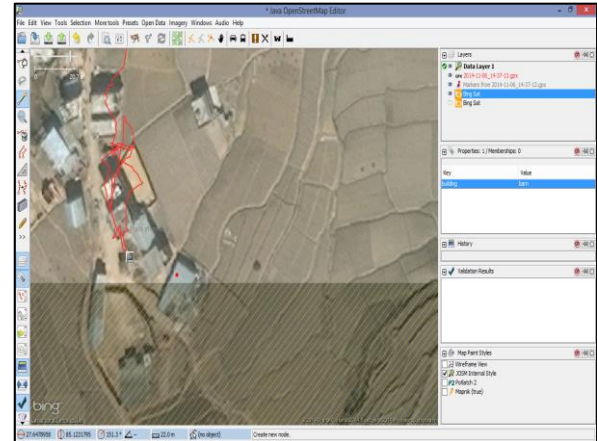
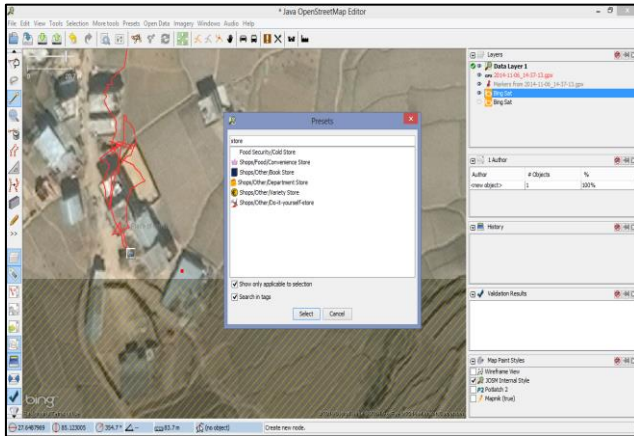
- The next step is to edit the map and add new items to the map. The GPX file that you loaded into JOSM may not be distinctly visible due to its default color and width. You can customize both of those. In the **Layers** window, right-click on the GPX track and click on '**Customize color**'. You can select any color you like. Similarly you can click on '**Customize track drawing**' and you can change the width.

Note: Remember that your GPS points (OSMTracker track) don't automatically go into OpenStreetMap. They only serve as your mapping guidelines. You need to add them to the OSM map digitally, using the draw tool.

After you download the OSM data you can add and edit items. If you want to move a point, line, or shape, use the **select tool**. Left-click and hold an object and drag it where it should. Use the **draw tool** to draw new points, lines, and shapes.



- Let's assume that you saved a picture in your OSMTracker, which is a national highway. To add this into OpenStreetMap, you should select the draw tool, and single-click on a starting point, move your mouse and click again on the next point of the road. Continue in this same manner until you are happy with the length of your line. To end the line, double-click your mouse in your map window. This will create a line. Then with this newly drawn line selected, go to the Presets menu at the top in the menubar, and find the preset for primary highway under highway. Enter the name of the highway and click "Apply Preset". Do the same to add points and shapes. To avoid common mistakes while using JOSM (refer to 'Editing Techniques and Common Mistakes Manual').



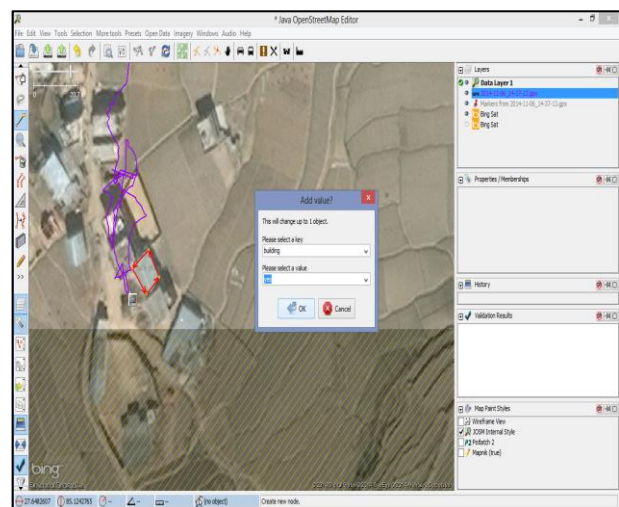
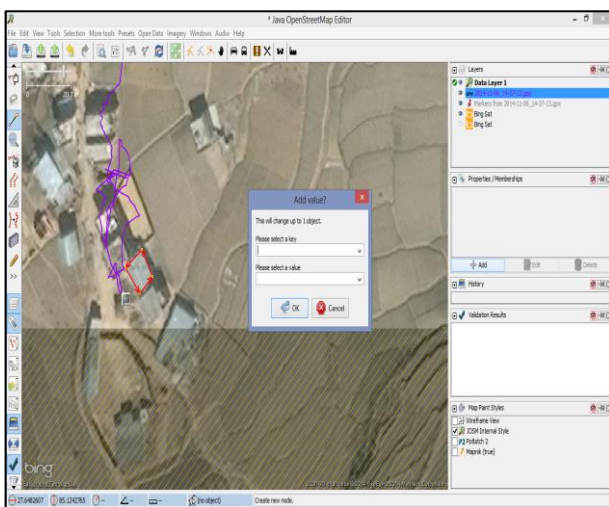
- When you draw a point, line, or shape, it has its locational information but no other information about what it is. In other words, you know **where** it is, but not **what** it is. You can add these **what** information by using **Presets** menu located on the top within the menu bar. Presets act as easy shortcuts when adding **tags** (additional information on points, lines and shapes).
- A tag is like a label that you can put on something. For example, if I draw a line, it is only a line. But I can add multiple tags to it that describe what type of line it is: this line is a highway, the name of the highway is “Tribhuvan Highway”.
- You can add as many tags as you want to an object. Tags are saved as pairs of text, called the **keys** and **values** i.e.: **highway = trunk, name = Bypass Road, ref = F37, oneway = no, surface = paved**
- If you select an object in JOSM, you can see all the tags that are attached to it in the **properties** panel below.

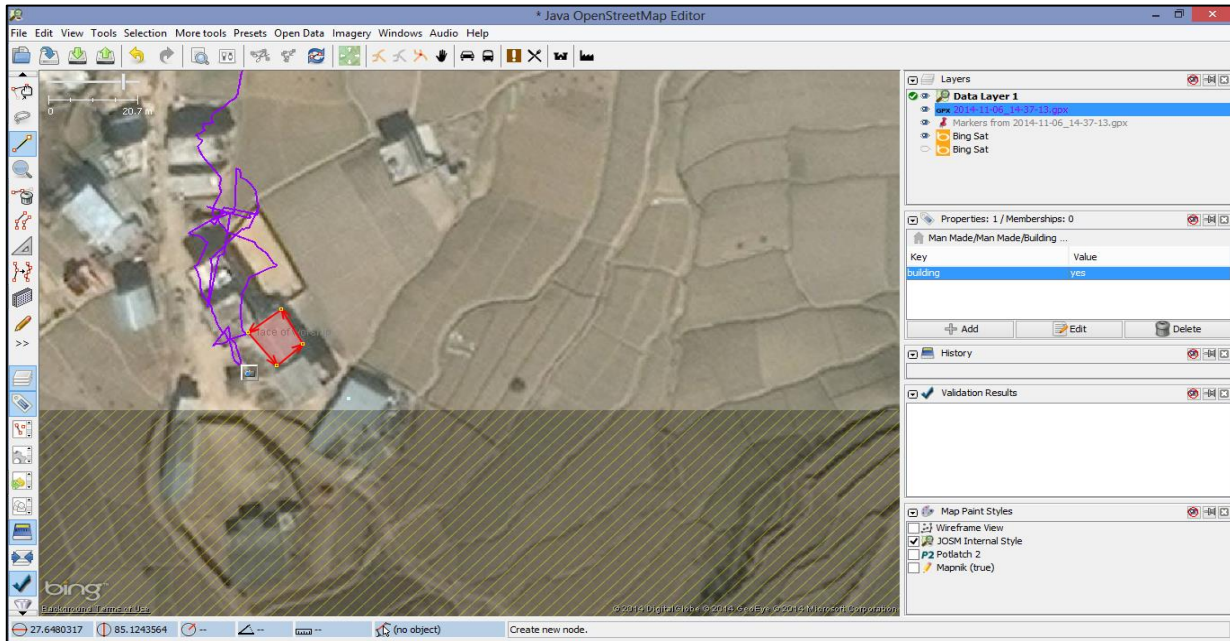
Tags: 5 / Memberships: 1

Highways/Streets/Trunk ...		
Key	Value	
highway	trunk	
name	Bypass Road	
oneway	no	
ref	F37	
surface	paved	
Member Of	Role	Position

5. Editing Tags

- I. You can add, edit and delete these tags from the **“Properties”** panel. The tags are traditionally in English however, additional languages can be added. For the sake of consistency and ease it is often better to use Presets. When you add or change tags, such as ‘primary highway’ or ‘footpath’, the style will change according to the tag’s pre-existing guidelines.
- II. To edit an existing object:
 - i.) Select it.
 - ii.) Then you can edit the tags in one of two ways:
 - (a.) You can use the Presets menu to open up a form and edit the information
or
 - (b.) You can edit the tags directly in the Properties window on the right.

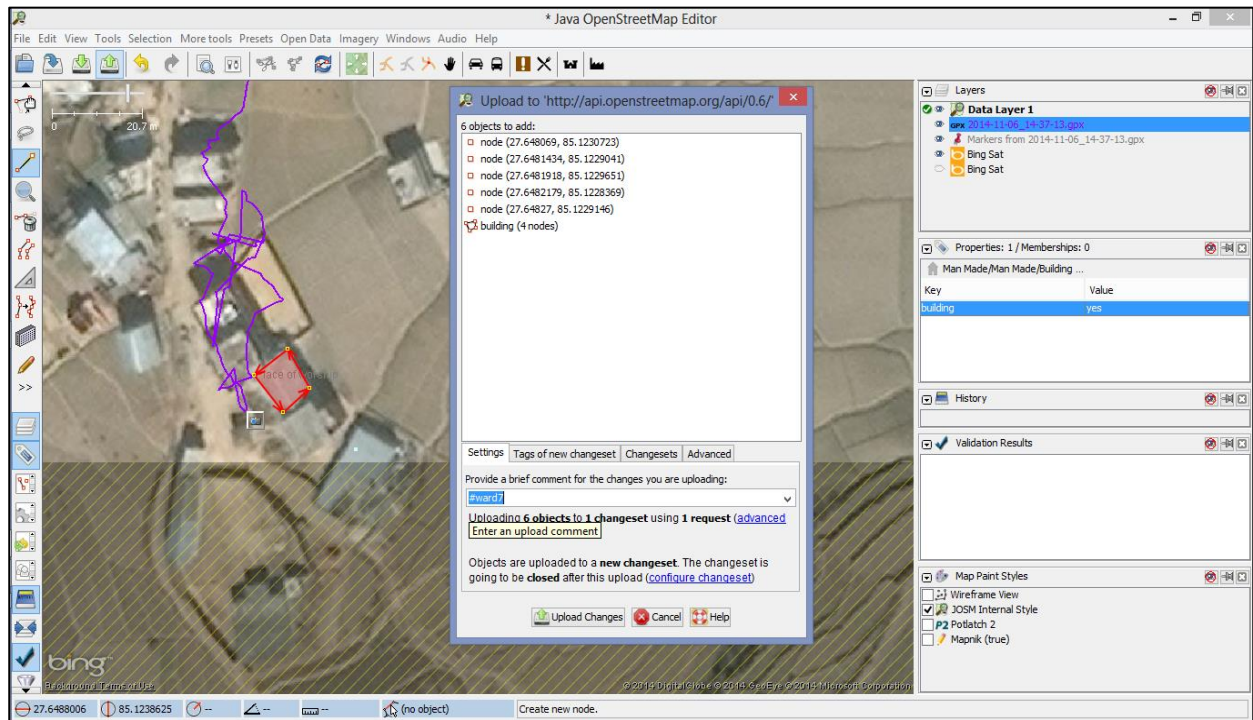




6. Upload Changes to OpenStreetMap

- After you have made a couple of changes to improve the map, let's save those changes to OpenStreetMap. To save the changes, you need to be connected to the internet, because you are uploading the changes to OpenStreetMap.
- Click "*File*" on the main menu, and then click "*Upload Data*". This will open up the upload window. You can access this window more simply by clicking on the upload button, shown in the right side.
- The window that appears shows a list of objects that you are adding and the objects you are modifying or deleting. In the box at the bottom you are asked to provide a comment about the changes that you are making. Type a description of your edits in
- Click "*Upload Changes*".





- E. If this is your first time uploading changes to OpenStreetMap, you will be asked for your OpenStreetMap username and password. Enter your username and password in the window that appears. If you check the ‘Save user and password’ box in this window, your username and password will be saved and you won’t need to enter them again in the future. Click “**Authenticate**”.

Enter credentials for OSM API

Authenticating at the OSM API

"https://api.openstreetmap.org/api/0.6/" failed. Please enter a valid username and a valid password.

Username

Password

☐ Save user and password (unencrypted)



- F. You will need to wait a few seconds for your changes to be uploaded, and then you are done! You have made your first edits to OpenStreetMap. You may continue editing to add all your points if you wish. Always be sure to upload your changes before you close JOSM.

7. See Your Changes on OpenStreetMap

- A. Open your internet browser and go to www.openstreetmap.org
- B. Move the map to the area that you edited or type the name of the place in the search bar on the left side of the window.
- C. You should see your changes now appear on the map! If you don't, try pressing CTRL+R to refresh the web page. Sometimes the map doesn't update properly and needs to be reloaded.
- D. What if you don't see your changes? Don't worry, it may take a few minutes for the changes to be shown on the map. Also, check your additions in JOSM to make sure that you added them correctly. A good general rule is, if your point has an icon in JOSM, then it should be seen on the main map at the OpenStreetMap website.